CLAIMS

I claim:

1. A catheter section comprising:

a flexible joint region defining a main lumen and an adjacent wire lumen therethrough, the wire lumen having an opening near or at a distal end of the flexible joint region;

a push/pull wire configured to be pushed or pulled along a longitudinal axis of the wire through the wire lumen; and

wherein the flexible joint region has a predetermined length sized to affect a flexure of the flexible joint region.

2. The catheter section of claim 1 further comprising at least one radio-opaque band near or at the distal end of the flexible joint region for securing the push/pull wire thereto.

3. The catheter section of claim 1 further comprising an inflatable member along the flexible joint region.

4. The catheter section of claim 3 wherein the inflatable member is located distally of the flexible joint region.

5. The catheter section of claim 3 wherein the inflatable member is located within the flexible joint region.

6. The catheter section of claim 3 wherein the inflatable member is located proximally of the flexible joint region.

7. The catheter section of claim 1 wherein the inflatable member comprises a material selected from the group consisting of elastomers and thermoplastic polymers.

8. The catheter section of claim 7 wherein the material is an elastomer.

9. The catheter section of claim 8 wherein the elastomer is selected from the group consisting of silicone rubber, latex rubber, natural rubber, butadiene-based co-polymers, EPDM, polyvinyl chloride, styrene-ethylene butylene-styrene co-polymers, and combinations thereof.

10. The catheter section of claim 8 wherein the elastomer is silicone rubber.

11. The catheter section of claim 7 wherein the material is a thermoplastic polymer.

12. The catheter section of claim 11 wherein thermoplastic polymer is selected from the group consisting of polyethylene, polypropylene, and Nylon.

13. The catheter section of claim 1 further comprising a catheter body located proximally of the flexible joint region.

14. The catheter section of claim 13 wherein the catheter body defines at least a first region having a first flexibility and a second region having a second flexibility more flexible than the first region.

15. The catheter section of claim 14 wherein the first region is located distally of the second region.

16. The catheter section of claim 14 wherein the second region is located distally of the first region.

17. The catheter section of claim 16 further comprising a third region having a third flexibility more flexible than the second region.

18. The catheter section of claim 17 wherein the third region is located distally of the second region.

19. The catheter section of claim 1 further comprising a control in communication with a proximal end of the push/pull wire for manipulating the flexible joint region.

20. The catheter section of claim 1 wherein the flexible joint region is configured to flex up to 180° relative to a longitudinal axis of the catheter section.

21. The catheter section of claim 1 wherein the flexible joint region further comprises a coil member.

22. The catheter section of claim 1 wherein the wire lumen comprises a braid along at least a majority of the wire lumen.

23. The catheter section of claim 22 wherein the braid terminates proximally of the flexible joint region.

24. The catheter section of claim 1 wherein the main lumen further comprises a lining along at least a majority of the main lumen.

25. The catheter section of claim 24 wherein the lining comprises a lubricious lining.

26. The catheter section of claim 1 wherein the wire lumen further comprises a lining along at least a majority of the wire lumen.

27. The catheter section of claim 26 wherein the lining comprises a lubricious lining.

28. The catheter section of claim 1 wherein the flexible joint region is comprised of a polymer which is softer than adjacent polymers.

29. The catheter section of claim 1 further comprising a coating over at least a majority of the flexible joint region.

30. A catheter assembly comprising:

a flexible joint region defining a main lumen therethrough;

a wire lumen adjacent to the main lumen, the wire lumen having an opening near or at a distal end of the flexible joint region;

a push/pull wire configured to be pushed or pulled along a longitudinal axis of the wire through the wire lumen; and

at least one radio-opaque band near or at the distal end of the flexible joint region for securing the push/pull wire thereto,

wherein the flexible joint region has a predetermined length sized to affect a flexure of the flexible joint region.

31. The catheter assembly of claim 30 further comprising a guidewire insertable through and removable from the main lumen for guiding the catheter assembly.

32. The catheter assembly of claim 30 further comprising an inflatable member along the flexible joint region.

33. The catheter assembly of claim 30 further comprising a control in communication with a proximal end of the push/pull wire for manipulating the flexible joint region.

34. The catheter assembly of claim 30 wherein the flexible joint region is configured to flex up to 180° relative to a longitudinal axis of the catheter section.

35. The catheter assembly of claim 30 wherein the wire lumen comprises a braid along at least a majority of the wire lumen.

36. The catheter assembly of claim 35 wherein the braid terminates proximally of the flexible joint region.

37. The catheter assembly of claim 30 wherein the main lumen further comprises a lining along at least a majority of the main lumen.

38. The catheter assembly of claim 30 wherein the wire lumen further comprises a lining along at least a majority of the wire lumen.

39. The catheter assembly of claim 30 further comprising at least one additional radio-opaque band located along the flexible joint region.

40. The catheter assembly of claim 30 further comprising a vaso-occlusive coil configured for delivery through the main lumen.